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# *Carex porrecta* (Cyperaceae), a Distinctive New Species from Northern South America and Costa Rica

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**ABSTRACT.** *Carex porrecta* is a relatively widespread but evidently rare species unique among New World representatives of *Carex* subg. *Indocarex* in having strongly outcurved perigynia with very long, spreading beaks and a conspicuous, thick rhizome. This species occurs in humid montane forests, often associated with ravines, rock outcrops, and steep slopes at about 1600–2600 m.

*Carex* subg. *Indocarex* has about 15–20 known species in the Neotropics, although it has never been the subject of a thorough study. This distinctive plant was recognized independently by both of us as quite distinct from the common *C. polystachya* (Hermann, 1974), to which specimens were referred (if identified), and we here describe it as new.

***Carex porrecta* Reznicek & Camelbeke, sp. nov.**

**TYPE:** Ecuador. Imbabura: km 64–65 Otavalo-Selva Alegre, 0°15'N, 78°34'W, 1600 m, 13 Mar. 1988, *Lægaard & Renvoize 70823* (holotype, AAU; isotypes, QCA, QCNE). Figure 1.

Plantae laxae caespitosae vel solitariae; culmi (35–)55–125 cm alti; vaginae basales brunneae, glabrae. Folia 8–14, plerumque basalia; laminae (15–)35–60 cm longae, (3–)6–13 mm latae; vaginae 4–12.5 cm longae, glabrae; ligulae (2–)6–22 mm longae. Inflorescentiae ca. (20–)35–75 cm longae; paniculae ca. 6–14, ascendentes vel nutantes, 4.5–12 cm longae; bracteae infimae laminis ca. (18–)28–55 cm longis, ca. (2.4–)3.5–13 mm latis et vaginis ca. (2.5–)3.5–6.5 cm longis. Perigynia (3.3–)4–4.5(–5.2) mm longa, 0.6–1.2 mm lata, patentia, valde extrorsus curvata, trigona, straminea vel olivacea, glabra, in rostrum contracta; rostra (1.5–)1.7–2.8 mm longa. Achenium ca. 1.6–2.3 mm longum, ca. 0.7–1 mm latum. Styli marcescentes; stigmata 3. Antherae 3, ca. 1.2–1.9 mm longae.

Plants loosely caespitose or solitary, somewhat elongate rhizomes up to 12 cm or more long and 3–5 mm thick; roots brown; culms (35–)55–125 cm tall, trigonous, smooth, with glabrous, brown, ± fi-

brous basal sheaths. Leaves 8–14, mostly basal; blades ca. (15–)35–60 cm long, (3–)6–13 mm wide, the widest leaves 9–13 mm wide, plicate, glabrous, antrorsely scabrous distally on the upper surface and especially the margins and slightly on the midrib adaxially; leaf sheaths 4–12.5 cm long, ± loosely enveloping culm, glabrous, green or the outermost pale reddish brown; inner band of sheaths glabrous, green, becoming stramineous to reddish near apex, veined, the apex deeply concave; ligules (2–)6–22 mm long, long-acute to obtuse (on the uppermost leaves), the free portion 0.5–1 mm long, stramineous to reddish brown, membranous and often slightly fringed. Vegetative shoots unknown. Inflorescences ca. (20–)35–75 cm long, panicles ca. 6–14, with the uppermost panicles overlapping and the lowest 2 panicles ca. 13–21 cm distant, panicles 1 or 2 at the nodes, ascending to nodding on thin, strongly flattened, smooth to ± scabrous peduncles; lowest panicles with peduncle ca. 7–18 cm long, the uppermost lateral panicles essentially sessile; lowermost bract with blade ca. (18–)28–55 cm long and ca. (2.4–)3.5–13 mm wide with sheath ca. (2.5–)3.5–6.5 cm long, the uppermost bracts much reduced. Panicles pyramidal, the lower 4.5–12 cm long, 1.5–6 cm wide, with 4–16 primary branches, the lower 1–10 branches again often compound with 1–10 secondary branches 6–20 mm long, and the secondary branches sometimes with 1–3 tertiary branches up to 8 mm long, the upper panicles much reduced; primary branches ascending, 8–55 mm long, subtended by an urceolate, pubescent cladophyll. Ultimate spikes 4.5–16 mm long; pistillate portion 3–16 mm long, ca. 4.5–9.5 mm wide, with (2–)4–15 perigynia, staminate portion (1.5–)3.5–5.5(–7.5) mm long, 0.6–1.4 mm wide, ca. 3–10-flowered. Pistillate scales (2–)2.5–3.8(–4.5) mm long, 0.8–1.5 mm wide, ovate, acute to acuminate, in the lowermost spikes usually with

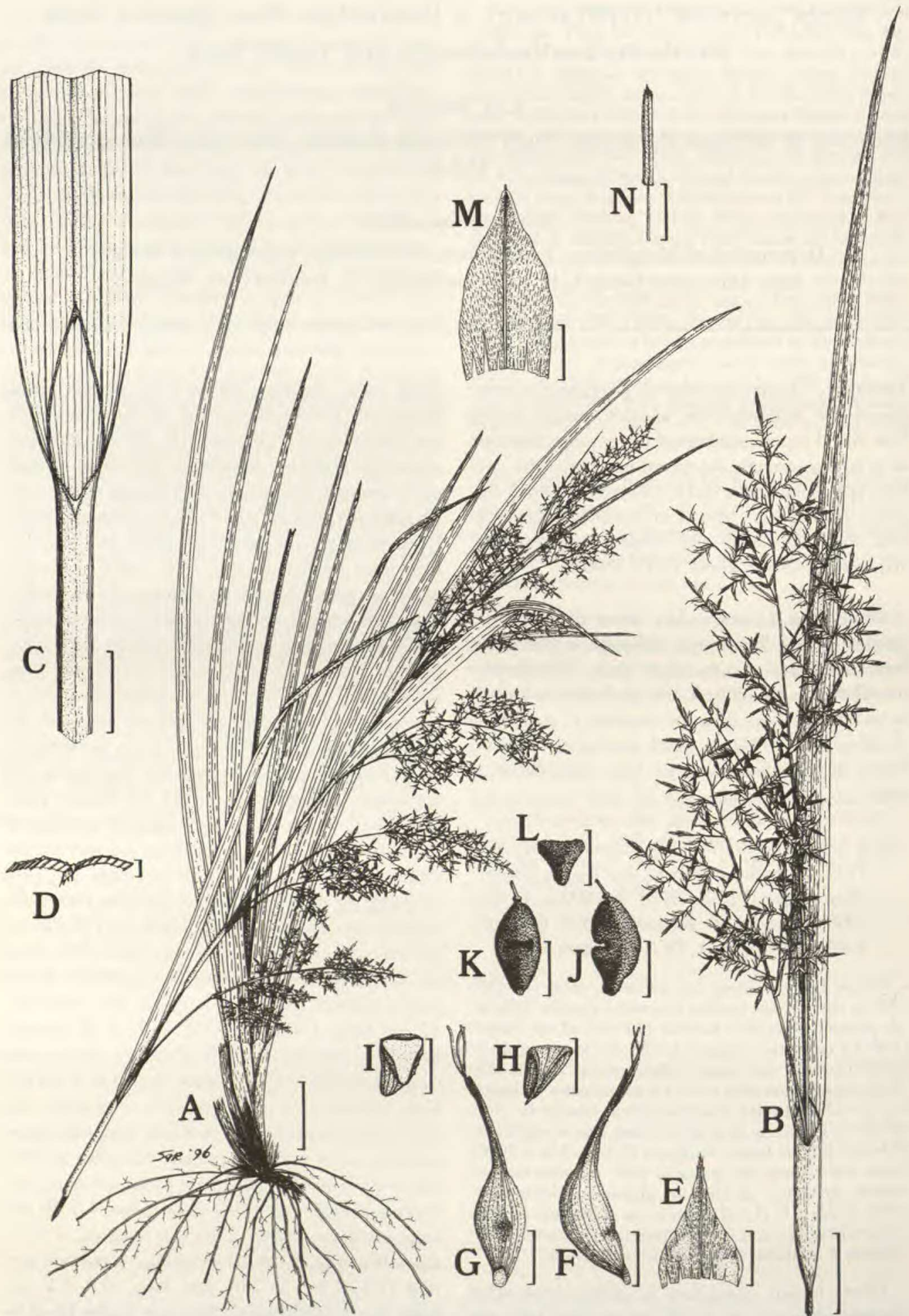


Figure 1. *Carex porrecta* Reznicek & Camelbeke. —A. Habit. —B. Portion of inflorescence. —C. Sheath and ligule. —D. Leaf, transverse section. —E. Pistillate scale. —F. Perigynium, side view. —G. Perigynium, front view. —H.

a scabrous awn up to 3 mm long, glabrous or sometimes with a few, short, appressed hairs abaxially, reddish brown to dark brown with a green center, usually with just 1 main vein. Staminate scales (2.9–)3.3–4(–4.3) mm long, ca. 0.8–1.4 mm wide, lanceolate to narrowly ovate, acute to acuminate, awnless, glabrous, golden or reddish brown to brown, 1-veined. Perigynia (3.3–)4–4.5(–5.2) mm long, 0.6–1.2 mm wide, spreading and strongly outcurved, trigonous with  $\pm$  flat, lanceolate to narrowly ovate sides, the sides sometimes distended by the mature achene, stramineous to olive green to brown, glabrous, sessile, 10–21-nerved, the nerves often golden brown to brown, contracted into a beak; beaks (1.5–)1.7–2.8 mm long, stramineous to reddish brown near the apex, smooth, the apex hyaline, membranaceous, strongly oblique to irregularly bidentate with teeth up to 1.2 mm long. Achenes ca. 1.6–2.3 mm long, ca. 0.7–1 mm wide, trigonous with flat to concave, often asymmetric, narrowly elliptic sides, tightly enveloped by the perigynia, dark brown, finely papillose, sessile, often strongly and irregularly indented on one or two sides. Styles withering; stigmas 3. Stamens 3, anthers ca. 1.2–1.9 mm long, yellow, twisted, filaments white, up to 4 mm long.

*Carex porrecta* apparently occurs sparingly from Ecuador north to Costa Rica in humid forests at 1600–2600 m elevation (the label on *Cerón 1149* gives a greater altitudinal range of 1800–3356 m). Specific habitats on specimens include: “very humid rock shelves” and “on boulder along stream,” and the species apparently occurs mostly on steep banks and in ravines and steep valleys. Fruiting specimens have been collected in April, March, July, and September.

The epithet is derived from the Latin *porrectus*: extended, stretched outward and forward, in refer-

ence to the elongate, outcurved beak that is such a conspicuous feature of this species.

Both the prominently indented achenes and the long, outcurved, smooth beak of *Carex porrecta* are unique in subgenus *Indocarex* in the Neotropics, and this species appears to have no close relatives. There are some Old World species, such as *C. filicina* Nees or *C. raphidocarpa* Nees, among others (Kükenthal, 1909), that also have smooth, long beaks. However, these all differ in many other characters, and *C. porrecta* does not appear to have a close relationship with any Old World *Carex*.

*Paratypes.* COSTA RICA. **Limón:** Cordillera de Talamanca, Atlantic slope, Canyon of the Río Siní, 1800–1900 m, 9°13'N, 82°59'W, 15 Sep. 1984, *Davidse & Herrera 29166* (MO). VENEZUELA. **Bolívar:** Mount Roraima, ascent of ledge along SW-facing side, from beginning of sandstone bluffs to summit, 2255–2620 m, 27 Sep. 1944, *Steyermark 58743* (F). COLOMBIA. **Cauca:** between Q. Curuyaco and Santa Rosa, along Rio Caquata, 1840–1700 m, 23 Jul. 1944, *Core 1035* (NY). ECUADOR. **Pichincha:** Old road Quito–Santo Domingo, between San Juan and Chiriboga, 0°16'S, 78°41'W, 2500 m, 22 Mar. 1979, *Holm-Nielsen 16070* (AAU); road Quito–Nono–Pacto, between Nono and Tandayapa, 2400 m, 0°2'S, 78°37'W, 24 Mar. 1979, *Holm-Nielsen 16123* (AAU); on road Nono–Nanegalito, app. 5 km below Sierra, 2400 m, 0°2'S, 78°38'W, 13 Mar. 1984, *Lægaard 51828* (AAU); road to Lulumbamba, vicinity of Pan de Azúcar, 00°05'N, 78°30'W, 1800–3356 m, 11 Apr. 1987, *Cerón 1149* (QCNE).

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#### Literature Cited

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Perigynium, top view. —I. Perigynium, transverse section. —J. Achene, side view. —K. Achene, front view. —L. Achene, top view. —M. Staminate scale. —N. Anther. Scale bar = 5 cm in A, 2 cm in B, 5 mm in C, and 1 mm in D–N. Drawn by Susan A. Reznicek from *Davidse & Herrera 29166* (MO).